	Notice of Allowability	Application No.	Applicant(s)
		10/717,435	MORITA, AKIRA
		Examiner	Art Unit	
		DUC Q. DINH	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *11/19/03*.

2. ☒ The allowed claim(s) is/are *1-18*.

3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a) ☒ All   b) ☐ Some*   c) ☐ None   of the:

   1. ☒ Certified copies of the priority documents have been received.

   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.

   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

   1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____ .

   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)

2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)

3. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date *11/19/03*

4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application

6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .

7. ☐ Examiner's Amendment/Comment

8. ☒ Examiner's Statement of Reasons for Allowance

9. ☐ Other _____ .

RICHARD HJERPE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

DETAILED ACTION

1.   This Office Action is response to the Application filed on November 19, 2003. Claims 1-

18 are currently pending and being examined.

Allowable Subject Matter

2.   Claims 1-18 are allowed.

Reason for allowance

The present invention related to a display system having display controller having using

display command signal and display command identification signal to control the data output of

the display driver. Each independent claim identifies the uniquely distinct features

"wherein the display controller:

includes first to $(j+2)$th data output terminals (where j is a natural number) for outputting

$(j+2)$ bits of display data out of display data that is output in a k-bit unit (where k is an integer

such that $k >= j+2$);

outputs display data in a j-bit unit to the display driver through the first to j-th data output

terminals; outputs command data for controlling the display driver instead of the $(j+1)$th bit of

display data, through the $(j+1)$th data output terminal to the display driver; and outputs a

command identification signal for identifying the command data instead of the $(j+2)$th bit of

display data, through the $(j+2)$th data output terminal to the display driver, and

wherein the display driver includes: first to j-th data input terminals for inputting display

data in a j-bit unit; a latch which fetches the command data that is specified according to the

command identification signal;

a decoder which decodes the command data fetched into the latch; and

a control section which outputs a control signal corresponding to a decoding result by the

decoder, the display driver driving the data lines based on the control signal and the display data

that has been input through the first to j-th data input terminals." (claim 1)

" a display controller which supplies multiplexed data including display data to the

display driver and also controls the display driver,

wherein the display controller:

includes first to (j+1)th data output terminals (where j is a natural number) for outputting

(j+1) bits of display data out of display data that is output in a k1-bit unit (where k1 is an integer

such that k1 >=j+1);

outputs multiplexed data in which display data and command data has been time-division

multiplexed within one horizontal scan period, in a j-bit unit to the display driver through the

first to j-th data output terminals; and

outputs a command identification signal for identifying the command data instead of the

(j+1)th bit of display data, to the display driver through the (j+1)th data output terminal, and

wherein the display driver includes:

first to j-th data input terminals for inputting display data in a j-bit unit;

a latch which fetches command data from the multiplexed data, specified according to the

command identification signal;

a decoder which decodes the command data fetched into the latch; and

a control section which outputs a control signal corresponding to a decoding result by

the decoder;

the display driver driving the data lines based on the control signal and the display data

included within the multiplexed data that has been input through the first to j-th data input

terminals." (claim 2)

wherein the display controller:

includes first to (j+p)th data output terminals (where j is a natural number) for outputting

(j+p) bits of display data out of display data that is output in a k2-bit unit (where k2 and p are

positive integers such that k2.gtoreq.j+p);

outputs display data in a j-bit unit to the display driver through the first to j-th data output

terminals; and outputs command data instead of the (j+1)th to (j+p)th bits of the display data

through the (j+1)th to (j+p)th data output terminals to the display driver, and

wherein the display driver includes:

first to j-th data input terminals for inputting display data in a j-bit unit;

a latch which fetches the command data;

a decoder which decodes the command data fetched into the latch; and

a control section which outputs a control signal corresponding to a decoding result by

the decoder, the display driver driving the data lines based on the control signal and the display

data that has been input through the first to j-th data input terminals." (claim 3)

"the display controller including:

first to (j+2)th data output terminals;

a mode setting register for setting an operation mode of the display controller to a first or second mode;

a command data output section which outputs command data for controlling the display driver and a command identification signal for specifying the command data; and

a display data output section which outputs display data in a k-bit unit (where k is an integer such that k >=.j+2) or a j-bit unit,

wherein the display data output section:

outputs (j+2) bits of display data out of display data that is output in a k-bit unit, through the first to (j+2)th data output terminals, in a first mode; and

outputs display data in a j-bit unit through the first to j-th data output terminals, and also outputs command data instead of the (j+1)th bit of display data through the (j+1)th data output terminal and the command identification signal instead of the (j+2)th bit of display data through the (j+2)th data output terminal, in a second mode." (claim 7)

"the display controller comprising:

first to (j+1)th data output terminals;

a mode setting register for setting an operation mode of the display controller to a first or second mode;

a command data output section which outputs a command identification signal for specifying command data for controlling the display driver; and

a display data output section which outputs multiplexed data in which display data in a

k1-bit unit (where k1 is an integer such that k1 >= j+1) or a j-bit unit and the command data are

multiplexed, within one horizontal scan period,

wherein the display data output section:

outputs the multiplexed data including (j+1) bits of display data out of display data that is

output in a k1-bit unit, through the first to (j+1)th data output terminals, in a first mode; and

outputs the multiplexed data including display data in a j-bit unit through the first to j-th

data output terminals, and also outputs the command identification signal at a time

corresponding to command data included within the display data instead of the (j+1)th bit of

display data, through the (j+1)th data output terminal, in a second mode." (claim 8)

the display controller comprising:

first to (j+p)th (where p is a natural number) data output terminals;

a mode setting register for setting an operation mode of the display controller to a first or

second mode;

a command data output section which outputs command data for controlling the display

driver; and

a display data output section which outputs display data in a k2-bit unit (where k2 is a

positive integer such that k2 >=j+p) or a j-bit unit,

wherein the display data output section:

outputs (j+p) bits of display data out of display data that is output in a k2-bit unit, through

the first to (j+2)th data output terminals, in a first mode; and

outputs display data in a j-bit unit through the first to j-th data output terminals, and also

outputs command data instead of the (j+1)th to (j+p)th bits of display data through the (j+1)th to

(j+p)th data output terminals, in a second mode." (claim 9)

The closest prior art of Aoki (U.S Patent No. 6,657,648), Nagai et al. (U.S Patent No.

7,015,902) and Ishiyama (U.S Patent No. 6,930,675) show similar systems which also have

display controller using command data and command identification data to control the output of

the display driver, but either singularly or in combination, fail to anticipate or render above

quoted limitations obvious.

Any comments considered necessary by applicant must be submitted no later than the

payment of the issue fee and, to avoid processing delays, should preferably accompany the issue

fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for

Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to DUC Q DINH whose telephone number is (571) 272-7686. The

examiner can normally be reached on Mon-Fri from 8:00.AM-4:00.PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Richard Hjerpe can be reached on (571) 272-7691. The fax phone number for the

organization where this application or proceeding is assigned is **571-273-8300**.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DUC Q DINH
Examiner
Art Unit 2629

DQD
September 28, 2006

RICHARD HJERPE
SUPERVISORY PATENT EXAMINER
TECHNICAL CENTER 2600